

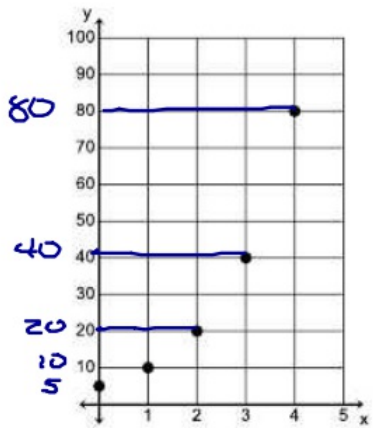
**Notes: Day 4 Lin Vs Exp, Four Repres.**

Directions: In each of the following problems, you are given one of the representations of a linear function. Complete the remaining 3 representations and answer the questions.

1.

<p><u>Context</u></p> <p>Jason bought a new car for \$12,000. Each year the value of the car goes down so that the value is <math>\frac{3}{4}</math> of what it was the previous <u>year</u>.</p> <p><math>\frac{3}{4} = 0.75</math></p>	<p><u>Table</u></p> <table border="1"> <thead> <tr> <th>years x</th> <th>\$ y</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>12,000</td> </tr> <tr> <td>1</td> <td>9,000</td> </tr> <tr> <td>2</td> <td>6750</td> </tr> <tr> <td>3</td> <td>5062.50</td> </tr> <tr> <td>4</td> <td>3796.88</td> </tr> <tr> <td>5</td> <td>2847.66</td> </tr> </tbody> </table>	years x	\$ y	0	12,000	1	9,000	2	6750	3	5062.50	4	3796.88	5	2847.66	<p><u>Questions</u></p> <p>a) discrete or continuous</p> <p>b) domain <math>0 \leq x \leq \infty</math> <math>[0, \infty)</math></p> <p>c) range <math>0 &lt; y \leq 12000</math> <math>(0, 12000]</math></p> <p>d) What is the value at <math>f(10)</math> <math>\approx 12000(\frac{3}{4})^{10}</math></p>
years x	\$ y															
0	12,000															
1	9,000															
2	6750															
3	5062.50															
4	3796.88															
5	2847.66															
<p><u>Graph</u></p>	<p><u>Starting Point (a):</u> \$12,000</p> <p><u>Factor of Change (b):</u> <math>\frac{3}{4}</math> or 0.75</p> <p><u>Equation:</u> <math>f(t) = a \cdot b^t</math> <math>f(t) = 12000(\frac{3}{4})^t</math></p>	<p><math>12000 \times 0.75 \times 10</math> Enter</p> <p><math>f(10) = 675.76</math></p> <p>e) What is the value at <math>f(15)</math> <math>\approx 12000(0.75)^{15}</math> <math>= 160.36</math></p>														

2.

Context	Table	Questions														
	<table border="1"> <tr><td></td><td></td></tr> <tr><td>0</td><td>5</td></tr> <tr><td>1</td><td>10</td></tr> <tr><td>2</td><td>20</td></tr> <tr><td>3</td><td>40</td></tr> <tr><td>4</td><td>80</td></tr> <tr><td>5</td><td>160</td></tr> </table>			0	5	1	10	2	20	3	40	4	80	5	160	<p>a) discrete or continuous</p> <p>b) domain</p> <p>c) range</p> <p>d) What is the value at <math>f(7) = 5(2)^7</math></p> <p style="text-align: center;">=</p>
0	5															
1	10															
2	20															
3	40															
4	80															
5	160															
<p><u>Graph</u></p> 	<p><u>Starting Point (a):</u> 5</p> <p><u>Factor of Change (b):</u> 2</p> <p><u>Equation:</u>  <math display="block">f(x) = a \cdot b^x</math> <math display="block">f(x) = 5(2)^x</math> </p>	<p>e) What is the value at <math>f(11)</math>?</p>														

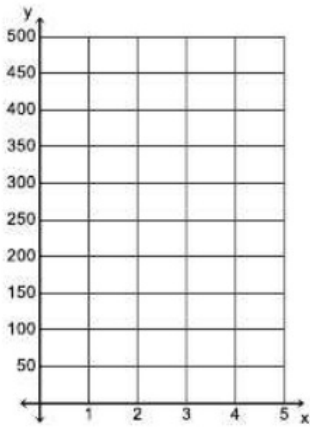
1. Evaluate using  $f(x) = -3x + 5$  and  $g(x) = 8\left(\frac{1}{2}\right)^x$

a)  $f(-1)$                       b)  $g(-1)$                       c)  $\frac{f(-1)}{g(-1)}$

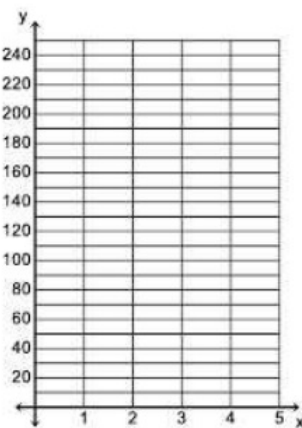
d)  $f(2)$                           e)  $g(2)$                           f)  $f(2) + g(2)$

**Directions:** In each of the following problems, you are given one of the representations of a linear function. Complete the remaining 3 representations and answer the questions.

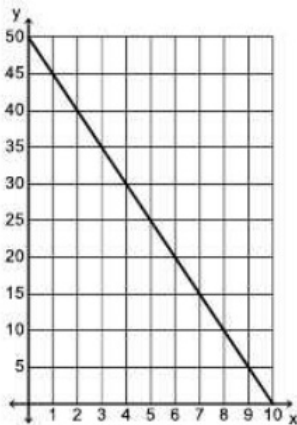
2.

Context	Table	Questions														
<p>There are 500 seals together in the ocean. A shark comes along and eats half the seals in a week. The next week he eats half of the remaining seals and so forth each week.</p>	<table border="1"> <tr><td></td><td></td></tr> <tr><td>0</td><td></td></tr> <tr><td>1</td><td></td></tr> <tr><td>2</td><td></td></tr> <tr><td>3</td><td></td></tr> <tr><td>4</td><td></td></tr> <tr><td>5</td><td></td></tr> </table>			0		1		2		3		4		5		<p>a) discrete or continuous</p> <p>b) domain</p> <p>c) range</p>
0																
1																
2																
3																
4																
5																
<p><b>Graph</b></p> 	<p><b>Starting Point (a):</b></p> <p><b>Factor of Change (b):</b></p> <p><b>Equation:</b></p>	<p>d) What is the value at <math>f(12)</math>?</p> <p>e) What is the value at <math>f(20)</math>?</p>														

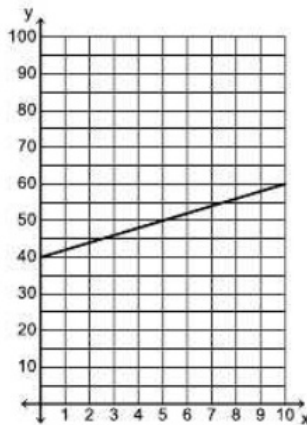
3.

Context	Table	Questions														
	<table border="1"> <tr><td></td><td></td></tr> <tr><td>0</td><td></td></tr> <tr><td>1</td><td></td></tr> <tr><td>2</td><td></td></tr> <tr><td>3</td><td></td></tr> <tr><td>4</td><td></td></tr> <tr><td>5</td><td></td></tr> </table>			0		1		2		3		4		5		<p>a) discrete or continuous</p> <p>b) domain</p> <p>c) range</p>
0																
1																
2																
3																
4																
5																
<p><u>Graph</u></p> 	<p><u>Starting Point (a):</u></p> <p>2</p> <p><u>Factor of Change (b):</u></p> <p>3</p> <p><u>Equation:</u></p> $f(x) = 2 \cdot 3^x$	<p>d) What is the value at <math>f(8)</math>?</p> <p>e) What is the value at <math>f(11)</math>?</p>														

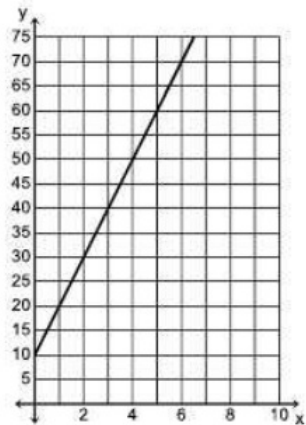
4. Find the slope and y-intercept of each line and then write the equation.



a)



b)



c)